Colonial Pipeline Company

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Washington, DC 20590-0001

RE: Docket ID: PHMSA-2007-27954
Pipeline Safety: Control Room Management/Human Factors; Proposed Rule
73 Federal Register 53076 (September 12, 2008)

The purpose of this letter is to provide comments on the September 12, 2008 Notice of Proposed Rulemaking (NPRM) issued by the Pipeline and Hazardous Materials Safety Administration (PHMSA) addressing Control Room Management/Human Factors.

Colonial has reviewed the comments submitted under separate cover by the American Petroleum Institute (API) and the Association of Oil Pipe Lines (AOPL) relating to this NPRM. To the extent that those comments do not contradict the comments submitted herein, Colonial supports and reaffirms API's/AOPL's comments to this NPRM.

I. Executive Summary

Colonial Pipeline Company ("Colonial") is making a formal response to the above referenced Notice of Proposed Rulemaking (NPRM) in an effort to ensure Control Centers are regulated fairly with clear rules, without undue burden to personnel and costs. Colonial believes PHSMA has significantly underestimated the burden to personnel and costs associated with the Proposed Rule.

Colonial has been instrumental in the industry in applying human factor techniques in our control rooms and in tools and job aids to assist employees in making their work safer and protecting the public and the environment from any pipeline related incidents. To that end, Colonial has been an active participant in API Control Room Management committees and in the Controller Certification ("CCERT") program. Colonial's activities include shift turnover programs, narrative logs, fatigue training and other tools designed for more effective control of our pipelines. Colonial does not take our responsibility lightly, nor should we.

Some of the added activities required by this rule will increase training, procedures, technology, and management costs over our entire system and, we believe, add little improvement to operations safety. We believe these activities to be superfluous to existing procedures, processes and training

already in existence at Colonial and throughout the industry. We believe these additional burdens in fact could distract operators from concentrating on the highest risk issues that impact pipeline systems. While there is no trade off for safety, we must be responsible to the markets we supply, our stockholders, the public and the environment.

Colonial currently has 45 controllers at its central control center in the Alpharetta, Georgia office. As the term "controller" is currently defined in the Proposed Rule, the total number of controllers at Colonial is anticipated to increase to 374 and encompass as many as 60 field locations. Significantly, sixty (60) percent of Colonial's workforce would be considered "controllers".

Added duties under the Proposed Rule are anticipated to include increased training for all new field locations, study guide material building and updating, fatigue training including 4 hours classroom training per employee, yearly evaluations for each employee at 2 hours each, annual Controller physicals at $400 per employee, and additional training material development.

Colonial estimates the increased costs associated with the above added duties will be $1,632,000 annually, plus a onetime cost of between $500,000 and $1,500,000. Details of Colonial's cost estimate are as follows: (1) Overall the cost for training and evaluating 374 Controllers annually will be $1,122,000. This is derived using 100 hours of training per employee at an average wage of $30 per hour; (2) The cost of annual physicals will be $150,000 for 374 Controllers; (3) The cost for shift exchange to ensure a clean turnover for the oncoming controller will be $360,000; and (4) The cost for training material development is estimated to range anywhere from $500,000 to $1,500,000.

Colonial further estimates the additional personnel costs associated with complying with §195.454(c)(iv) (i.e. systematic re-verification of the accuracy of SCADA system display) of the Proposed Rule would be $240,000 annually. Colonial also estimates lost throughput resulting from the need to verify all SCADA points back to the individual stations would result in a revenue loss of not less than $1.1 million and could range as high as $9.9 million depending on market demand during the required verification window. This loss would then be repeated on a regular basis should the Proposed Rule be enacted as drafted.

As an additional cost component, Colonial further estimates the additional personnel costs associated with complying with §195.454(e)(1)(ii) (i.e. review SCADA operations at least weekly for identification of unexplained changes in the number of alarms or controller management of alarms) of the Proposed Rule is significant. Colonial believes that the weekly detailed reviews and reconstruction of operations that are required by §195.454(e)(1)(ii) would require significant level of staffing increases in the Control Center environments. As defined by the Proposed Rule, "control center" could apply to as many as 60 facilities within Colonial. Dedicated staff would be required to review, analyze and reconstruct whether a controller responded correctly to alarms. We believe that between four to twenty-four additional personnel would be required to perform such actions resulting in additional costs from $360,000 to well in excess of $2 million annually.

Set out in the next section are Colonial's comments to specific provisions within the Proposed Rule. Specifically, Colonial's comments include addressing the following:

- → Recommendation that the definitions of a "controller" and a "control room" as defined in the NPRM be modified.
- → Recommendation that PHSMA include a definition of "common corridor" in an effort to ensure that operators understand what areas PHMSA would have operators coordinate with in the event of a leak or failure.
- → Recommendations dealing with IT/SCADA information being requested and its impact to Colonial.
- → Impact imposed by a very ambiguous alarm management process.
- → Recommendations that additional requirements imposed by this Proposed Rule relating to Operator Qualifications be moved to Part 195, Subpart G.
- → Recommendation that §195.451(i)(8) be clarified to specifically allow for on-the-job training so long as such training is performed under the supervision or direction of a qualified Controller.
- → Recommendation that PHSMA include a definition of "senior executive officer".

II. Proposed Rule Provisions and Colonial's Comments

§195.2 Definitions.

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Alarm means an indication provided by SCADA or similar monitoring system that a parameter is outside normal or expected operating conditions.

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Colonial's Comments:

The term "alarm" has come to have broad meaning that varies significantly from pipeline operator to pipeline operator. The definition provided within the Proposed Rule can and should be clarified even further in order to facilitate a consistent understanding, and ultimately consistent application, should this rule go into effect. Colonial believes the definition of "alarm" should be modified as follows:

> "Alarm means an indication provided by SCADA or similar monitoring system that a parameter is outside of normal or expected operating conditions and requires a response by a Controller or system in order to avert an abnormal or emergency operation that could affect the integrity of the pipeline system."

§195.2 Definitions.

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Control Room means a central location or local station at which a control panel, computerized device, or other instrument is used by a controller to monitor or control all or part of a pipeline facility or a component of a pipeline facility.

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Colonial's Comments:

Colonial prefers the definition of "Pipeline Control Room" used in API Recommended Practice 1168 with the exception of the word "or". As such, Colonial believes the term "control room" should be changed to "pipeline control room" and defined as set out below.

> "Pipeline Control Room means an operations center staffed by personnel charged with responsibility for remotely monitoring and controlling entire or multiple sections of pipeline systems."

§195.2 Definitions.

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Controller means an individual who uses a control panel, computerized device, or other equipment to monitor or control all or part of a pipeline facility that the individual cannot directly observe with the naked eye. An individual who operates equipment locally, but who cannot see the equipment respond without using a closed circuit television system or other external device, is a controller when performing this activity regardless of job title or whether actions are overseen by another controller or supervisor. An individual who performs these functions on a part time basis is considered a controller only when performing these functions.

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Colonial's Comments:

Colonial prefers the definition of "Pipeline Controller" used in API Recommended Practice 1168 with the exception of the word "or". As such, Colonial believes the term "controller" should be changed to "pipeline controller" and defined as set out below.

> "Pipeline Controller means a qualified individual whose function within a shift is to remotely monitor and control the operations of entire or multiple sections of pipeline systems via a SCADA system from a Pipeline Control Room, and who has operational authority and accountability for the daily remote operational functions of pipeline systems as defined by the Pipeline Operator."

As it relates to the "pipeline controller" definition, Colonial would define the word "monitor" as set out below.

> "Monitor, for purposes of the pipeline controller definition, means to observe conditions to determine if action should be taken or conditions reported to appropriate personnel."

§195.454. Control room management.

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(b) Roles and responsibilities. Each operator must define the roles and responsibilities of a controller during normal, abnormal, and emergency operating conditions. To provide for a controller's prompt and appropriate response to operating conditions, each operator must define:

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(4) A controller's responsibility to provide timely notification and coordination with the operator of another pipeline in a common corridor when a leak or failure is suspected, including upon receipt of a notification from the public concerning a suspected leak on an asset owned or operated by the other company but located in the same common corridor or right-of-way.

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Colonial's Comments:

Colonial believes that the term "common corridor" used in §195.454(b)(4) should be defined. Colonial believes the term should be defined as set out below.

"Common corridor means a location where pipelines run immediately adjacent to other pipelines and either share or have adjacent right-of-ways."

§195.454. Control room management.

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(c) Provide adequate information.

Each operator must provide each controller with the information necessary for the controller to carry out the roles and responsibilities defined by the operator and must verify that a controller knows the equipment, components and the effects of the controller's actions on the pipeline or pipeline facilities under the controller's control. Each operator must:

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(2) Validate that any SCADA system display accurately depicts field equipment configuration by completing all of the following:

(i) Conduct and document a point-to-point baseline verification between field equipment and all SCADA system displays to verify 100 percent of the system displays. An operator must complete the baseline verification no later than [insert date three years after effective date of final rule] or by [insert date one year after effective date of final rule] for an operator of a pipeline system containing less than 500 miles of pipeline. An operator may use any documented point-to-point verification completed after [insert date three years before effective date of final rule] to meet some or all of this baseline verification. A point-to-point verification must include equipment locations, ranges, alarm set-point values, alarm activation, required alarm visual or audible response, and proper equipment or software response to SCADA system values.

(ii) Verify that SCADA displays accurately depict field configuration when any modification is made to field equipment or applicable software and conduct a point-to-point verification for associated changes.

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(iv) Develop a plan for systematic re-verification of the accuracy of the SCADA system display.

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Colonial's Comments:

Colonial believes the wording in §195.454(c)(2)(i) is ambiguous and overly prescriptive and is likely to lead to significant issues in interpretation and enforcement. We suggest that this provision be modified to allow the operator to develop processes, procedures and documentation to assure that all data represented to the Pipeline Controller via the SCADA system be verified between field installation and the SCADA displays. It is Colonial's experience that operators may utilize differing methods to qualify their systems including point to point check out, yearly field Preventative Maintenance Programs, and strict Management of Change (MOC) and testing procedures and guidelines. Data is critically important to Colonial, and we could not perform our business without absolute surety in the integrity of our data. Colonial believes the value of the level of prescriptive regulation as provided in the Proposed Rule would be redundant to existing maintenance and Preventative Maintenance activities already in place at Colonial and in much of the industry.

Colonial believes §195.454(c)(2)(ii) should be qualified with the wording "accurately depict the functionality of devices and equipment in the field." Many SCADA displays are a point of standardization and, as such, fully depict the function of field equipment in a station, but may not reflect the actual physical layout of a station. This is done to avoid confusion and present a consistent view of pipeline facilities to a controller. Based on Colonial's suggestion, §195.454(c)(2)(ii) would be modified as set out below.

> " (ii) Verify that SCADA displays accurately depict the functionality of devices and equipment in the field when any modification is made to field equipment or applicable software and conduct a point-to-point verification for associated changes."

Colonial believes the "systematic re-verification" required in §195.454(c)(2)(iv) is a poor replacement for the maintenance of strict MOC and ongoing testing and maintenance validation of the SCADA system data and displays. Operators should be given license to manage, enforce and audit change management programs to ensure that the system never needs re-validation.

Colonial estimates the additional personnel costs associated with complying with §195.454(c)(iv) of the Proposed Rule would be $240,000 annually to conduct system wide verification activities on an ongoing and perpetual basis. Colonial also estimates lost throughput resulting from the need to verify all SCADA points back to the individual stations would result in a revenue loss of not less than $1.1 million and could range as high as $9.9 million depending on market demand during the required verification window. This loss would then be repeated on a regular basis should the rule as written be enacted.

§195.454. Control room management.

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(d) Fatigue mitigation

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Colonial's Comments:

Colonial generally agrees with this portion of the Proposed Rule for off-duty activities and fatigue recognition. Colonial disagrees, however, with the cost that PHSMA has estimated to implement the Proposed Rule. Colonial's estimated costs are included within the Executive Summary set forth at the beginning of this submittal.

§195.454. Control room management.

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(e) Alarm management. Each operator using a SCADA system must assure appropriate controller response to alarms and notifications. An operator must:

(1) Review SCADA operations at least once each week for:

(i) Events that should have resulted in alarms or event indications that did not do so;

(ii) Proper and timely controller response to alarms or events;

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(iv) Identification of nuisance alarms;

(v) Verification that the number of alarms received is not excessive;

(vi) Identification of instances in which alarms were acknowledged but associated response actions were inadequate or untimely;

(vii) Identification of abnormal or emergency operating conditions and a review of controller response actions;

(viii) Identification of system maintenance issues;

(ix) Identification of systemic problems, server load, or communication problems;

(x) Identification of points that have been taken off scan or that have had forced or manual values for extended periods; and

(xi) Comparison of controller logs or shift notes to SCADA alarm records to identify maintenance requirements or training needs.

(2) Review SCADA configuration and alarm management operations at least once each calendar year but at intervals not to exceed 15 months. At a minimum, reviews must include consideration of the following factors:

(i) Number of alarms;

(ii) Potential systemic issues;

(iii) Unnecessary alarms;

(iv) Individual controller's performance changes over time regarding alarm or event response;

(v) Alarm indications of abnormal operating conditions;

(vi) Recurring combinations of abnormal operating conditions and the inclusion of such combinations in controller training;

(vii) Alarm indications of emergency conditions;

(viii) Individual controller workload;

(ix) Clarity of alarm descriptors to the controllers so controllers fully understand the meaning and nature of each alarm; and

(x) Verification of correct alarm set-point values.

(3) Promptly address all deficiencies identified in the weekly and calendar year SCADA reviews.

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Colonial's Comments:
Colonial has been a strong proponent of Alarm Management in the Control Room and continues to support methods for reviewing and managing alarms and continuously improving our pipeline system. However, Colonial believes this section as written is overly prescriptive and may provide little if any additional benefit or protection versus an existing formal alarm management program. Operators like Colonial utilize real time and instantaneous feedback utilizing electronic event reporting and repair request systems to immediately repair and report aspects of the pipeline system which do not perform to the Controller's expectation. Responsible operators who utilize these systems will receive no value by conducting an additional weekly review.

Colonial believes the requirement in §195.454(e)(1)(i) leads to extremely low-value work. As set forth above, §195.454(e)(1)(i) provides the following: "Events that should have resulted in alarms or event indications that did not do so." Colonial is doubtful of the cost-benefit of searching for such events and with what success rate Pipeline Operators can identify such items. Operators do need a method for their Control Center Staff to report unusual events, failures and recommend improvements for alarm management. More direct language stating such may meet the intention of the drafters of §195.454(e)(1)(i).

Colonial believes that the weekly detailed reviews and reconstruction of operations that are required by §195.454(e)(1)(ii) would require significant level of staffing increases in the Control Center environments. As defined by the Proposed Rule, "control center" could apply to as many as 60 facilities within Colonial. Dedicated staff would be required to review, analyze and reconstruct whether a controller responded correctly to alarms. We believe that between four to twenty-four additional personnel would be required to perform such actions resulting in additional costs from $360,000 to well in excess of $2 million annually.

Colonial believes §195.454(e)(1)(iv) is another example of overly prescriptive language in the Proposed Rule. Utilizing the definition of "alarm" contained within the Proposed Rule, Colonial believes that there would be no such thing as a nuisance alarm under this Proposed Rule.

Colonial would be interested in any additional clarity that may be available that would define "excessive" as utilized in §195.454(e)(1)(v).

§195.454. Control room management.

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(f) Change management

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Colonial's Comments:
Colonial does not disagree with the premise of §195.454(f), however, PHMSA should include language that in the Proposed Rule that recognizes various levels of change and allow the Operators to establish internal processes and procedures to manage the changes based on risk and complexity

of the change. These actions will also add cost to those PHMSA's already underestimated cost to industry.

§195.454. Control room management.

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(g) Operating Experience

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(3) Each operator must review the accuracy and timeliness of SCADA data and how it is portrayed on displays.

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Colonial's Comments:

Colonial believes §195.454(g)(3) is wholly redundant to §195.454(c)(1) and should be removed.

§195.454. Control room management.

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(h) Training. Each operator must establish a training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator must train each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

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(2) Use of a simulator or non-computerized (tabletop) method to train controllers to recognize abnormal operating conditions, in particular leak and failure events. Simulations and tabletop exercises must include representative communications between controllers and individuals that operators would expect to be involved during actual events. Controllers will participate in improvement and development of tabletop or simulation training scenarios.

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Colonial's Comments:

Colonial believes §195.454(h)(2) is extremely broad and needs to be better defined and narrowed. We agree with adequate training for our controllers to identify abnormal and emergency operating procedures and we currently perform this training. However, the use of simulators and/or tabletop simulation to this training will increase existing time requirements for training twofold. The use of computer simulators increases costs significantly based on the definitions of "controller" and "control room" as provided in the Proposed Rule.

§195.454. Control room management.

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(i) Qualification. An operator must have a program in accordance with subpart G of this part to determine that each controller is qualified. An operator's procedures for the qualification of controllers must include provisions to:

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(8) Prohibit individuals without a current controller qualification from performing the duties of a controller.

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Colonial's Comments:
Colonial believes the requirements set forth under §195.454(i) should be moved and addressed, if applicable, in the Part 195, Subpart G-Qualification of Pipeline Personnel (see §195.501 et seq.). To add requirements to an existing rule by addition of another rule complicates compliance requirements and training requirements to train employees on following regulations. This would be much simpler as a change to the existing regulation requirement.

Colonial also believes that §195.454(i)(8) needs more clarity to specifically allow for on-the-job training of controllers. Currently, on-the-job training is an element of Controller and part-time Controller training. This training is overseen by a "trainer Controller". Unless on-the-job training is provided for, initial training would be required to be done on a simulator. Colonial does not believe that is the intent of §195.454(i)(8). As such, Colonial recommends §195.454(i)(8) be modified as set out below.

> " (8) Prohibit individuals without a current controller qualification from performing the duties of a controller, unless such individuals are supervised or directed by a trainer Controller with a current controller qualification."

§195.454. Control room management.

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(i) Validation. An operator must have a senior executive officer validate by signature not later than the date by which control room management procedures must be implemented (see paragraph (a) of this section), and annually thereafter by June 15 of each year, that the operator has:

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Colonial's Comments:
Colonial believes that PHSMA should include a definition for the term "senior executive officer".

§195.505. Qualification Program.

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(j) Incorporate requirements applicable to controller qualification in accordance with Sec. §195.454.

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Colonial's Comments:
As reflected previously in Colonial's comments to §195.454(i), Colonial believes all the requirements set forth in §195.454(i) should be moved and addressed, if applicable, in Part 195, Subpart G - Qualification of Pipeline Personnel.

III. Conclusion

In conclusion, Colonial appreciates the opportunity to provide comments to the Control Room Management/Human Factors; Proposed Rule. Colonial has been instrumental in the industry in applying human factor techniques in our control rooms and in tools and job aids to assist employees in making their work safer and protecting the public and the environment from any pipeline related incidents. However, Colonial believes the Proposed Rule as drafted presents an undue burden on operators, personnel and costs. Colonial urges PHSMA to take into consideration Colonial's comments to the Proposed Rule made herein, as well as comments provided by API and AOPL under separate cover.

If you have any question, please feel free to contact us.

Respectfully,

Norm Szydlowski
President and Chief Executive Officer